

63/53
FACTS AND OBSERVATIONS

RELATIVE TO

INOCULATION

IN BERLIN,

AND TO THE POSSIBILITY OF HAVING THE
SMALL-POX A SECOND TIME.

By WILLIAM BAYLIES, M. D.

MEMBER OF THE ROYAL COLLEGES OF PHYSICIANS OF LONDON
AND EDINBURGH, AND PRIVY-COUNSELLOR AND
PHYSICIAN TO THE KING OF PRUSSIA.

Magna est veritas, et praevalabit.

EDINBURGH:

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T O T H E

PRESIDENT and FELLOWS
of the ROYAL COLLEGE of PHY-
SICIANS of EDINBURGH.

GENTLEMEN,

IT is not from the vanity of having the name of so learned a Society at the head of these sheets, nor from an idea that they will be honoured with your sanction because written by one of your members, that they are dedicated to you: It is from a persuasion that you are as candid as you are learned, and that you must be universally acknowledged the most proper judges of their subject-matter. The author therefore, without any other apology, submits

iv DEDICATION.

submits them to your censure; and takes the present occasion publicly to express his gratitude for the repeated favours you have conferred on him, and the most deserved esteem and respect with which he is,

GENTLEMEN,


Your most obliged and
obedient servant,

WILLIAM BAYLIES.

BERLIN, 1780.

ADVERTISEMENT.

THE following pages have already appeared in the German and French languages, though first written in English: And notice having been given that a translation of them was intended, the author, to prevent misinterpretations in any part, has consented to give them to the public in their original dress.



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FACTS AND OBSERVATIONS

RELATIVE TO

INOCULATION.

CONSCIOUS that the credit of every society must be in some degree injured when an imputation of want of knowledge or of a desire to deceive is cast on any of its members, it is with reluctance I resume the pen to expose a matter to the public in which the judgment or integrity of a medical brother and his adherents must be impeached. But when gentlemen who hold such distinguished ranks and characters in their profession as

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must stamp a credit on whatever they aver, attempt, on the strength of their bare assertions, to establish as facts things not only disputable in themselves, but which, if true, must subvert a most prevalent and interesting opinion; an opinion so universally received as to be generally esteemed a fixed law of nature, and on the existence whereof the tranquillity of mind and the preservation of life to thousands may depend: it then becomes the duty of every individual, in whose power it may be, not only to inquire strictly into the true state of the facts on which the grounds of such opinion are attacked, but also impartially to communicate the result to the public, that every one whom it materially concerns may be enabled to judge of it for himself, and not be obliged to rest
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his confidence on the opinions and averments of others.

On these considerations, without further apology, I hope to stand justified in the breast of every unprejudiced reader for the publication of the following pages. They contain anecdotes and observations concerning cases which have been urged as a proof that having once passed the small-pox is no security from the influence of its infection for the time to come, but that the human blood, after having undergone the disease once, is nevertheless liable to receive and mix with the variolous virus again, so as to generate the distemper a second time; and consequently, if so, as much oftener as either design or ignorance may render the prevalence and belief of such reports, for any purpose, necessary.

It is not my intention here to discuss opinions, but to confine myself to facts: and I shall endeavour to state them in such a manner that they may carry with them their own evidence.

With this view it will be necessary to mention some particular events that were previous and leading to the cause of this publication. They cannot fail in some degree to manifest the acting motives of those individuals whose conduct has made the appearance of these sheets requisite; and this knowledge will the better enable my readers to form a just and clear judgment upon the whole.

I shall first observe that the present Dr. Muzel, privy-counsellor, &c. to his Prussian Majesty, and his late deceased cotemporary, the celebrated
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and ingenious anatomist Professor Meckel, had for some years deservedly enjoyed the reputation of being two of the first physicians in the city of Berlin; and that they had both undertaken the practice of inoculating for the small-pox.

Of six children which the first had, at one time, inoculated in the same family he had been so unfortunate as to lose three, and with great difficulty saved the others, who still carry lasting marks of the fury of the disease *. By which unfortunate event, it is said, the Doctor's
humanity

* Of this fact a very celebrated physician, much distinguished for his practice in inoculation in England, writes thus: "I am glad to inform you, that nothing of this sort has happened here, notwithstanding that many persons of the lowest class, highly unfit for conducting patients under the disease, have engaged in inoculations."

humanity was so greatly affected that he solemnly declared he would never inoculate another; and I have not heard that he has as yet broke his resolution.

Dr Meckel, out of a small number he at different times had inoculated, was likewise so very unlucky as to have two children in one family, and one in another, cut off in the same manner, under his care.

These fatal instances in the practice of inoculation happening soon after one another in the same place, and in the hands of two such skilful and deservedly eminent gentlemen in the profession of physic, were very alarming. Practitioners of lesser distinction in the healing art were discouraged from daring to attempt it again, and the public in general afraid to submit to it; the consequence of which
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was that for some time a total stop was put to its further progress.

But the miraculous success of inoculation in England and other parts of the world, being perpetually inserted in every newspaper, and thereby communicated from one country to another, naturally roused the reflections of every one that read them, and made such as were considerate question, Whether or not the greatest part, or all of the fatal events that had attended inoculation at Berlin, had not been owing to some irregularity in the conduct of the patients, or to the want of a sufficient skill or experience in the physicians?

These, or the like reasonable sentiments, with the universal desire of self-preservation, co-operating on the mind of that deserving Prussian nobleman Baron Arnim of Boizenbourg, determined

determined him, notwithstanding the unhappy events that had befallen his neighbours, to make a journey to Dresden, and consult me upon the subject; and I had the happiness so clearly to convince him of the safety of inoculation under proper treatment, and of the great advantages which the communication of the small-pox in this manner had over the most happy natural infection, that he immediately resolved to come to me there, and to bring with him his only son, a very delicate amiable youth, and be inoculated together. He did so a short time after, when both of them passed the disease as happily as possible, and without a single hour's confinement, even to the house, or any complaint or ill consequence afterwards, though they were inoculated in the month of November,

their minds. So successful was he in his endeavours for that purpose that he influenced his Excellency Baron de Horst, father of the two children that had died of the small-pox by inoculation, under the care of Dr Meckel, and who had an only daughter still surviving, to have her inoculated as soon as possible, together with a most amiable young lady, her companion, who was his niece: and in order to induce me to come to Berlin to undertake the care of them he prevailed on several other persons of distinction amongst his acquaintance to have their children inoculated at the same time.

But no sooner was this resolution, and my being called for that purpose, become publicly known, than all means and engines possible were artfully employed to prevent my proceeding

proceeding in it, and to discourage a prevalence of the practice if it should once be begun.

As proof of this, a few days before my arrival a paper was inserted in the Leipzig Gazette, giving an account of a great number of persons who had had the natural small-pox so happily, in the house of the Cadets at Berlin, as it was hoped would fully demonstrate that there was little or no danger in the natural disease, and that of consequence inoculation must be a wanton, or at least an unnecessary, practice. It was not considered that the most extensive charitable foundation in the universe must, in itself, be too small a space to allow the events happening in it to be looked upon as a basis for calculating the greater or less fatality in general of any disease that is

universally epidemic : that all young gentlemen who are resident in such established houses are kept to a strict observance of the rules of temperance, and are immediately taken care of by a skilful physician on the first symptoms of any illness appearing : that persons who are in high health in common life, and at liberty to follow their own inclinations, are too apt to disregard and neglect all precautions ; and are, as experience shows us, most generally infected with the contagion of the small-pox when the season by reason of the heat is improper to undergo it, when their blood is inflamed with intemperance and exercise, or when they are under some other disadvantageous circumstances ; any of which in the mildest small-pox are alone sufficient to render it fatal ;

fatal : Considerations which fully demonstrate that from the published happy success of the natural disease in the house of the Cadets, under the care of a regular physician, no solid argument can be drawn against the necessity or prudence of inoculation.

Besides this artful attempt to prejudice the minds of the public against the utility of this salutary branch of the healing art, the day after my arrival a gentleman called at my lodgings in my absence, who announced himself as the secretary of the College of Medicine, and there left for me a verbal message not to proceed in the exercise of my profession in Berlin, as I was a stranger, until it should be known if his Majesty, to whom the College had sent a remonstrance against it, would allow

low of it or not. The next day however his Excellency Count Reufs, president of the Faculty of Medicine, sent me his written permission to go on in the business I was called for, until his Majesty should declare his disapproval thereof: and a day or two after, instead of being served with a restraining order from the sovereign, as by many was hoped, I was, by his most gracious mandate, publicly honoured with a full permission to proceed, under the sanction and seal of the same learned and respectable Society, the College of Physicians at Berlin.

Thus authorised, and having duly prepared my patients, who were seventeen in number, I inoculated them with variolous matter which I had procured the day before I set out from Saxony for Berlin. I had
taken

taken it myself, at the crisis of the disease, from the young Count de Waldstein, a fine healthy youth, who had the small-pox from inoculation, under the care of two physicians at Dresden; by whose good management he was at last recovered, tho' he was so loaded with the disease as to be for some time in imminent danger, and now carries evident marks of his having had it; so that there cannot remain the shadow of doubt that his distemper was the true small-pox: I mention this circumstance because other eruptive diseases have sometimes been mistaken for it; and the matter of these diseases having been used for inoculation instead of true variolous virus, the patients have been left as liable to the infection of the small-pox afterwards as they were before. In such instances
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the appearance of the real disease, at a future day, has often laid the foundation for its being falsely said that some individuals have contracted the distemper a second time: two strong examples of which there is the greatest reason to believe happened with the children of Major de Goetzen, of Potsdam, the particulars whereof are related below.

It was near the end of November when I inoculated the several patients above-mentioned committed to my care in Berlin. The season was extremely cold and severe, with a rigid frost and heavy falls of snow; notwithstanding which all the children, many of whom had very tender delicate constitutions, were every day taken out in the open air, according to the approved rules of the modern practice, in which it has been observed that
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all those who have been the most hardy in that respect have invariably fared the best. However this sort of treatment, established as it is in countries where its advantages have been experienced, having not been adopted by the practitioners in these parts, was naturally cried aloud against as rash and empirical, and as the sure means of throwing back the variolous humour into the blood, and thereby destroying the health, if not the lives, of my patients. Yet, to the mortification of these my prejudiced opponents, I had the happiness to see them all pass the disease very slightly, and remain well for some time after ; tho' none of them were made immortal by having been inoculated, but were all left equally subject to the influence of every disease except the small-pox as they

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severally were before they had undergone that operation.

The gentlemen who had opposed the practice, seeing it thus not only successful but also in the hands of a foreigner, strove next to stop its general prevalence and reception ; and for this purpose insinuated into the minds of the public that it was a practice which, on experience, was found not to answer the ends intended by it ; for that by the new method which I used the variolous matter was not expelled from the blood, and that consequently it was no security against the future infection of the natural small-pox. And for the better gaining credit to this argument they alledged farther that the small-pox in its own nature was a contagious disease, which, whether had by inoculation or otherwise,

was

was sometimes liable to be taken a second time ; adding, that rare as examples of it might have been in other countries they were not at all uncommon in this.

But all this, however it might operate on the lowest of the people, happily for the public, had, I hope, no influence on superior minds ; for his most gracious majesty the King, well satisfied of the benefits arising from inoculation, favoured it with the sanction of his countenance, and attached me to his person and country, with convincing marks of honour and of his approval ; immediately on which, with his permission, I returned into Saxony, to arrange every thing necessary there for my establishment in Prussia. A whole month passed before I could accomplish what was requisite for my return to

Berlin; in which interval two of those children who had passed the inoculation under my care were taken ill; one the amiable daughter of Major Quast; the other a fine boy, Augustus, the son of Lieut.-Colonel de Blumenthal; and both of them, in my absence, were committed to the care of the eminent Dr Muzel, of whom I have before made mention.

The first of these little ones was a fair delicate girl, whose lungs were tender, who had a cough, and was often suspected to have been troubled with worms, and who, at this critical juncture, was become feverish, and was frequently attacked with convulsive symptoms.

No one can wonder, after what has preceded, that the attending physician should insinuate, as he did,
that

that all this was the result of inoculation. But when I consider the eminence he holds in his profession I cannot but blush at the information I received, of his being daily looking for a fresh crop of variolous pustules as the product and crisis of her fever and convulsions, and that he should ascribe her illness to matter left in her blood from the inoculation; while at the same time he gave evident proofs of his consciousness that it no way depended on a variolous cause, by honestly and skilfully treating her with proper doses of sweet mercury, extract of tansy, and other known remedies for the destruction of worms; by the aid whereof she happily recovered, without the appearance of any symptom that could give the least reason to believe the disease was a suppressed small-pox.

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The second was a well-looking comely boy, the son of Lieut.-Colonel de Blumenthal, one of the most attentive fathers I ever knew, and who himself kept a written diary of the progress of his child's illness, till within two days of his death: from this, and from the oral information he favoured me with, I have taken the stated case of his child's illness, which is hereafter recited; and to which I must add that, after opening the child's body, the Lieutenant-Colonel assured me, in express terms, that Dr Muzel, and the physicians who had been present at the examination into it, had declared, not only that the disease he died of was the true small-pox, but also that it was a mixture of the very best and worst species of that disease.

Indeed on the fifteenth day of the
child's

child's illness the disconsolate mother wrote me a note in the utmost distress, announcing to me that her son was then covered with eruptions which were said to be the small-pox; that she wished I would come and see if they were so or not, that I might preserve my reputation, if it was possible; terms evidently demonstrating what she had been taught to think of the matter by the attending physician, and that she had been induced to look upon it as my fault who had inoculated him if his constitution had been really so singular as to have been liable to the disease a second time.

In consequence of this notice from the mother I visited the child, as is mentioned in the stated case, and by the evidence of my own eyes was clearly convinced that it was not
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the small-pox with which he was afflicted; and gave my opinion accordingly, with my reasons for it, such as they are mentioned in the narration of the case. These I repeatedly offered, to the child's father, to support before Dr Muzel, if he would procure me an opportunity of doing it, by prevailing with him to meet me there. But the Colonel well knew that the Doctor would be so far from complying with this request, that if he was coming to his house, and saw my chariot at his door, he would (as he had done) go elsewhere, and not come in; notwithstanding that we were strangers one to the other, and that the rank he bears in his profession must ever make me hold him, as a physician, in a respectable light.

However, though I could not obtain

tain an interview with this learned gentleman, the call of the distressed parent, at the same time that it gave me an occasion to visit and see the child, put it in my power to get true information of every particular that had attended this extraordinary disease from its very beginning, so as to be able to lay the same properly and fully before such gentlemen of the profession whose distinguished eminence, and extensive experience in the treatment of the small-pox, might make them universally allowed to be amongst the best qualified of the Faculty to decide on the point in question. This I resolved to do, in hopes that by the publication thereof, with their respective opinions thereon, not only the minds of those whom, from affinity and the ties of nature, this particular case

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must

must most affect, might be perfectly tranquilized; but also that all those who, influenced by reason and example, had been induced to be inoculated for their future safety, might have no groundless doubts of the efficacy thereof; from the prevalence of any intentional misrepresentations of the child's case, which might be made public in order to answer some private ends by imposing on the faith of the world in general.

And that there may not be the least room for any one to suspect a partiality for either party in the persons to whom this decision was submitted, neither the name of the inoculator nor the physician afterwards concerned were mentioned in the stated case; the candid determination of the matter in question being

a point in which the whole public are more or less interested.

The narrative of the case was as follows :

Augustus de Blumenthal, a healthy child, five years old, on the 21st of November 1774 was inoculated with matter taken from an inoculated patient, who was loaded with the small-pox, and is greatly marked by it. On the eleventh, and succeeding days from the operation, the fever and eruptions regularly followed. The pustules appeared on different parts over his whole body, were more numerous than they generally are from inoculation, and matured, dried, and fell off as they ought to do, and with those of his brothers and sister, who were inoculated with him, and with whom he was

constantly kept, from the time the fever began till the disease was over. He was then repeatedly purged, as is usual in such cases; and continued well above six weeks afterwards, making no complaints till the last day of January 1775; when, while he was at dinner, he complained of being cold, yet afterwards amused himself at play with his companions, and in the evening said that he perceived a great weakness in his feet.

Wednesday, the 1st of February, and second day of the illness, he arose in good humour. At noon he eat with appetite, but less so at night. During the whole day, at times, he complained more or less of the weakness and uneasiness in his feet, sometimes walked about, and sometimes lay down on the sofa. The succeeding

ceeding night was restless and uneasy.

Thursday, the 2d day of the month, and third of the disease, a physician was called; and being told of all that happened to him, finding his pulse agitated, gave it as his opinion that there was something mixed in his blood which ought not to be there, though he could not say what; and in the evening, to allay the agitation, prescribed him some powders.

Friday, Saturday, and Sunday, the 4th, 5th, and 6th of the month, and fifth, sixth, and seventh of the illness, he shewed great lowness and dejection of spirits, had great weakness in his feet, complained of giddiness, and embarrassment in his head; yet nevertheless he had some, though but little, stomach to his food;

food ; and during all these three days he had a slight looseness, the discharges by which were of a green colour.

Monday, the 7th of the month, and eighth of the disease, a large round worm came from him, and he eat with good appetite ; though the disorder so increased that he was confined to his bed, and in the evening was delirious ; for the relief of which a blistering plaster was applied between his shoulders.

Thursday, the 8th of the month, and the ninth of the disease, his pulse in the morning was thought to be better, but in the evening the disorder increased ; he was again delirious, and blisters were applied to the calves of his legs. In this condition, being drowsy and watchful by turns, at uncertain and irregular times,

times, sometimes answering questions with propriety, and at other times irrationally, he continued from Tuesday till Saturday the 12th of the month, and thirteenth of the disease; when, in the evening, the surgeon, in giving him a glyster, perceived some small red spots like flea-bites to appear on his posteriors, but made no mention of it at that time. At midnight the physician again visited his patient; and found him excessively red and delirious, with every appearance of a violent impetus of blood to his head, and with involuntary contractions or drawings in the muscles of his arms and legs; at which time he ordered the surgeon to apply four leeches behind his ears, who, while they were drawing, observed a slight red ebullition upon the neck, which after bleeding disappeared,

disappeared, and the child lay two hours quiet; but then the uneasiness returned, and before morning he was three times alternatively affected with accesses of cold and heat, and had cramps and drawings in his arms and legs, like those before described.

Sunday, the 13th of the month, and fourteenth of the disease, in the morning, his anxiety and restlessness perfectly left him, and in the course of the day the delirium so diminished that about nine in the evening he was quite sensible, when the surgeon, being ordered to repeat the glyster, observed that the small red spots which he had before seen and not spoken of, were some of them increased in magnitude to the size of lentils.

Monday, the 14th of the month,
and

and fifteenth of the illness, early in the morning, the attendant physician again examined the eruptions, and said that he not only found their number great but that many of them on the back were broke and subsided, while at the same time others were only perceptible to his touch in the skin. A very few on the face and neck, though flat, were round and reddish in their circumference, and white on the tops, so resembling eruptions of the small-pox that they were suspected to be it; on which the physician that had inoculated the child was called to see if they were so or not, who when he came observed two or three flat eruptions on the face to be round, edged with a reddish colour and whitish on the top, as is above described; but on uncovering the body

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and

and examining the rest, the chief of which were situated on the back, he looked on them to have more the appearance of burns or scalds than of small-pox pustules; and seeing them of irregular forms, making flaccid and almost transparent vesicles, implete with a reddish watery fluid, with a visible blackness underneath, he could not from their appearance, considered with the time of their eruption and the early fluidity of their contents after their appearance, see any reason to think them at all variolous, especially as the child had so evidently had the disease from inoculation under his own eyes.

Tuesday, the 15th of the month, and sixteenth of the disease, the physician who had inoculated the child called again to see him, when he was informed that he had totally
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lost all power of swallowing, which was suspected to have been caused from pustules in the throat. He then went to the child's bed-side, when he not only found many of the before described bladdery eruptions broke and their water discharged but all those that were not so more flaccid and empty than the day before.

Wednesday, the 16th of the month, and seventeenth of the disease, there was very little or no observable change in the morning to the circumstances which had attended the preceding day, yet some glimmering hopes were conceived of the child's recovery; but about two in the afternoon the melancholy scene was closed by an easy death.

Thursday, the 17th of the month, and the morrow after the child's death,

the physician that had inoculated the child called again to inquire of the father if any thing more that was material had been observed between the time he had last seen the child and the hour of his death, when he told him that there had not; but that since his death the corpse had been inspected and opened in the presence of four eminent gentlemen of the faculty in Berlin, and that it had been reported to him,

That the external spots which had been covered with the before described bladders had many of them a blackish or gangrenous appearance under the skin, while others, that were extremely small, round and flat, seemed to have in them a small quantity of unconcocted matter:

That on one of the four places on the arms in which the infection had
been

been inserted in the inoculation there was found adhering a small dry scab :

That the throat was perfectly free from any pustulary appearance; and that all and every of the viscera were quite sound, and shewed no sign of any disease either external or internal :

But that upon opening the skull there was found in the lower and back part of the head eight ounces of extravasated water or serum, except which nothing deviated from a healthy and natural state.

QUERY. Was the disease above described the natural small-pox, the effect of any variolous matter left in the blood in consequence of the previous inoculation; or were the pustulary eruptions which shewed themselves on the twelfth day of the disease

a critical discharge of a putrid or other kind of fever ?

The case thus drawn up I inclosed in the following letters to Dr Watson, Dr Archer, and Baron Dimfdale, without informing them either who it was that had inoculated or that had attended the patient in his last illness. The gentlemen's opinions I asked separately, from a persuasion that it is too common in joint consultations to have the sentiments of one gentleman led by those of another, which by consulting them apart is effectually prevented, and the true judgment of each of them on the subject fairly obtained.

To

TO DR W. WATSON, &c.

SIR,

The zeal with which I know you are ever ready to exert yourself for the public good, and the great importance it is of that matters on the decision of which the tranquillity and safety of thousands depend should be laid before gentlemen of integrity and knowledge: Firmly persuaded that you are among the first on that list, and convinced by your * publication on inoculation, as
well

* An Account of a Series of Experiments, instituted with a view of ascertaining the most successful Method of treating the Small-pox. By W. WATSON, Doctor of Physic, Fellow of the Royal Society, one of the Trustees of the British Museum, and Member of the Royal College of Physicians.—London, printed for J. Nourse, Bookseller to his Majesty, 1778.

well as by your attention to the care of those children who have had the small-pox in the Foundling-hospital to which you are physician, (and in which by a standing order of the governors all who are received are obliged to be inoculated,) that your experience in that disease must be uncommonly great, I take the liberty of asking your opinion on the inclosed case of Augustus de Blumenthal; and I doubt not but that you will answer it fully and expeditiously; and will tell me also if you have ever known an instance of any person having had the small-pox twice; which will much oblige

Your obedient humble servant,

W. BAYLIES.

To

TO DR ARCHER, Physician to the
London Small-pox Hospital, &c.

SIR,

The great weight which every thinking person must allow to your judgment in variolous cases, from your very long experience in the London Small-pox Hospital as physician to that excellent Charity, and particularly in the natural small-pox for the care of which it was originally instituted, makes me esteem it my duty, in a question on that subject in the decision of which the whole public is interested, to ask your opinion amongst others. I therefore beg your sentiments on the inclosed case of Augustus de Blumenthal, by an answer to the subjoined queries; and that you will tell me also if, in

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your whole practice, you have ever met with an indubitable instance of a person having had the small-pox a second time, which in this country is averred not to be uncommon. In hopes of hearing from you soon, I am,

Sir,

Your most obedient humble servant,

W. BAYLIES.

TO BARON DIMSDALE, Doctor
of Physic, &c.

SIR,

The great reputation you have acquired in the knowledge of the small-pox by your known experience in inoculation, and by your open and candid * publication there-
on,

* The present Method of inoculating for the Small-pox; to which are added, Some
Experi-

on, as well as by the vast consequence of some of those persons who have successfully placed their confidence in your care for the treatment of that disease, are the reasons why I submit the inclosed case of Augustus de Blumenthal, and the queries upon it, to your opinion: and I beg to know if, in your very great practice, you have ever met with an indisputable instance of any one having had the small-pox a second time. Depending upon your benevolence for a speedy answer, I am,

Sir,

Your obedient humble servant,

W. BAYLIES.

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Experiments, instituted with a view to discover the Effects of a similar Treatment in the natural Small pox. By TH. DIMSDALE, M. D. 3d edit. 1767.

N. B. This book has been translated into German.

In answer to the letter sent to Dr Watson, the Doctor wrote: That he had read the case sent him to several physicians in London of the first credit, not one of whom in the least suspected that the disease of which the patient died was the small-pox; and with this information transmitted me the following as his own sentiments,

TO DR BAYLIES, &c.

SIR,

I have perused the case of Augustus de Blumenthal; and, from a diligent attention thereto, am of opinion that the disease which occasioned his death was not the small-pox, nor any thing which had relation thereto.

This opinion is founded on the patient's

tient's having had, at a distance of not less than six weeks before his death, a numerous eruption of various pustules, which matured, dried, and fell off, as they ought to do, and with those of his brother and sister who were inoculated with him.

That, after continuing well for six weeks, he was attacked with a disease which, proceeding to the seventeenth day, put an end to his life. It was not until the evening of the thirteenth day that any eruptions were perceived. Those are represented as small red spots like flea-bites, appearing on the back-part of his body, with a few on his face and neck. These on the second day after their appearance were full of a reddish watery fluid, with a visible blackness underneath.

The late appearance of these in the course of the disease, their filling so
fast

fast after they were observed, as well as other circumstances attending them which are mentioned in the transmitted case, induce me to consider these eruptions by no means of the variolous kind.

To the query therefore subjoined to the transmitted case, I answer, that in my opinion the disease in question was not the small-pox, nor the effect of any variolous matter left in the blood in consequence of the previous inoculation; but that it was a fever of the malignant kind; and that the eruptions which shewed themselves first on the thirteenth day were not critical discharges, as they did not appear to relieve the patient; but that they were symptomatic only, and attendant on the disease, and evince the great degree of acrimony in the humours at that time. Eight ounces of extra-

extravasated fluid being found in the back of the head, when that usually observed in dead subjects seldom exceeds a table-spoonful, is a large quantity; and though it might not distend the optic nerve sufficiently to produce blindness, as is observed in the hydrocephalus internus, it could not but disturb the brain in its functions, and heighten the delirium frequently mentioned during the course of this illness. From the great experience I have had in inoculation, I have seen in no one instance that the patient has had the small-pox a second time; though, when the eruptions have been very few, in order to be assured of their having had the disease, I have frequently caused the patient to be punctured a second, and even a third time, with active vario-

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lous matter ; but always without producing the small-pox a second time.

The possibility of having the small-pox a second time, whether after the disease has been brought on by natural contagion or by inoculation, is not credited here by any persons whose testimony is considered of any importance in matters of this sort.

WILLIAM WATSON, M. D.

LONDON,
14th April 1775.

Vice-president of the Royal
Society, Physician to the
Foundling Hospital, and
Member of the Royal Col-
lege of Physicians.

Dr Archer, in answer to the letter
sent him, writes as follows.

To

TO DR BAYLIES.

SIR,

I have read with attention the case you are pleased to do me the honour to ask my opinion upon; and must observe, that the time of duration of the eruptions, with their condition, and the state of the arms where the patient was inoculated, is not mentioned.

But it is said, The fever and eruptions regularly followed on the eleventh and succeeding days from the operation.

The pustules appearing on different parts over the whole body, matured, dried, and fell off, as they ought to do, and that the child had evidently the disease from inoculation.

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I am therefore of opinion, that the first distemper was the genuine small-pox ; and that the other, which seized this patient in good health on the last day of January, came at such a distant time from the inoculation, and was attended with such symptoms and eruptions as prove it to be a putrid fever unconnected with the first distemper, and such as might happen without any previous inoculation ; and not its consequence, nor the natural small-pox, as the child had that before by the inoculation.

I have never seen this disorder, in all my practice, twice in the same person, though I have been physician to the hospitals for small-pox and inoculation above six and twenty years, and have had under my care, without reckoning private patients, above twenty-six thousand. I am,
Sir,

Sir, your most obedient humble servant,

LONDON,
April 8. 1775.

EDWARD ARCHER.

Baron Dimisdale returned the stated case sent him, with the following opinion upon it :

“ I have carefully perused the above case, and am of opinion, *That the disease above described was not the natural small-pox.*

“ The cold fit which preceded the other complaints is what usually happens at the commencement of the small-pox in common with other fevers ; with this exception, I do not find one symptom during the whole illness that corresponds with the well-known progress of that disease.

“ The eruptions (on which I presume the suspicion of small-pox has been founded) differed from that dis-

temper in every essential point ; viz.

The time and manner of their appearance.

The parts they occupied, and their form and progress.

“ Neither am I of opinion, that the disease *was the effect of any variolous matter left in the blood in consequence of the previous inoculation.*

“ That the natural and inoculated small-pox, as well as other diseases which form critical discharges on the skin, may sometimes be succeeded by boils or breakings out, is well known ; but these happen rarely, follow soon, are free from danger, and easily cured by gentle purges. Now, in the case before me, I find the patient passed through the inoculated disease in a regular, complete, and satisfactory manner, *and continued well for six weeks after, making*

king no complaint ; after which he was seized with a disease that I have not the least doubt was a fever of the putrid kind : but I do not think the pustulary eruptions can with propriety be deemed critical, as they did not terminate the disease ; I rather esteem them to be marks or tokens of great malignity and danger.

“ In the whole course of my practice, which it is well known has been extensive, I never knew a single instance of any one having the natural small-pox after having been inoculated.

“ Nor have I ever known any person to have the disease a second time in the natural way.

“ I shall not pretend to decide on what may have happened to others, but this I aver to be true so far as relates to my own experience.

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“ The report of the gentlemen who opened the body affords no material information. The appearance of the spots is such as might be reasonably expected on a person who died of a malignant fever.

“ Dry scabs frequently remain on the inoculated parts for some months after the disease.”

DIMSDALE,

LONDON,
April 11. 1775.

Baron of the Russian Empire, Body Physician and actual Counsellor of State to her Imperial Majesty the Empress of all the Russias, and F. R. S.

The preceding opinion of Baron Dimsdale was inclosed in the following letter.

To

TO DR BAYLIES, &c.

London, April 11. 1775.

SIR,

Be pleased to accept my best thanks for a very polite and obliging letter, inclosing the case of Augustus de Blumenthal, which is now returned with my Answers to the Queries.

Permit me, Sir, to add, that in giving an opinion on a matter of so much consequence to mankind as the inoculation of the small-pox, one cannot be too careful to avoid being influenced by prejudices or any other motives that might warp the judgment.

It is the part of an honest man to relate the whole truth without the
least

least reserve, and I have now the honour of adding this declaration :

That my opinion respecting the case of Augustus de Blumenthal contains my real sentiments :

And what I have said relative to having the small-pox a second time is strictly true so far as relates to all my own patients.

I have only to add, that on any future occasion I shall be happy to give you any information in my power, and I hope soon to do myself the honour of presenting you with a little performance, as an addition to what I have already wrote on the inoculation for the small-pox, which is now preparing for the press.

I am, Sir, with great respect,

Your obedient humble servant,

DIMSDALE.

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The preceding pages being a full and plain state of the case, with the sentiments of the disinterested, learned, and experienced upon it, I shall not so greatly dishonour the last as to balance the arguments of those who have been of a different opinion against theirs by placing them together in a comparative view, but rely entirely upon the truth and clearness of all the circumstances related in this little narrative, and the reputation of those gentlemen for integrity and medical knowledge who have given their sentiments thereon.

Yet on the general question, Whether the small-pox may be had a second time or not? what that celebrated practitioner Mr Samuel Sharp has said in his most masterly treatise on the Operations of Surgery, at the close of his in-

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structions for inoculation, may very properly be added. His words are :
 “ It may not be amiss to observe, that upon the introduction of the practice of inoculation into England, amongst the many prejudices which prevailed against it there was none of such seeming weight as the opinion that it did not absolutely secure the patient from contracting the distemper again in the natural way ; but length of years and a strict inquiry have at last entirely falsified this doctrine among men of learning and candour.”

I now, without urging any arguments on either side, submit the whole for a final decision to the candid public, fully persuaded that at the bar of that tribunal it is impossible there should remain either the least ground for belief that this little patient was an instance

stance of the same individual's undergoing the small-pox a second time, or a doubt whether the report of his having been so arose from generous or selfish motives, and was propagated with a good or bad design.

In addition to the case and opinions which are related in this narrative, I might with justice ask (on a review of the treatment which was used for the patient's recovery, compared with some of the most established physical maxims), How far the attenuating power of cantharides was made use of with propriety in so dissolved a texture of blood as was evident in this disease? If the highly caustic state of the fluids which filled those bladdery eruptions, vesicles, or pustules, by whatever name they may be called, which appeared on the patient on the thirteenth day of his

H 2 illness,

illness, might not in a great measure be ascribed to the salts of those flies? and also, If they did not contribute to produce that copious secretion of extravasated lymph that was found pressing the cerebellum on opening the head after death? These seem to me questions very worthy of consideration by those who have applied that remedy.

That glysters of pure wine have been repeatedly thrown up into the intestines of a delicate lady labouring with the confluent small-pox and discharging blood by urine, that a large quantity of quite cold water has been suddenly poured on the head of a gentleman while he has been freely transpiring in a warm bath, and that many other similar strokes of bold and extraordinary practice have been used at Berlin, I
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am indubitably informed; and should of consequence be well warranted in giving a loose to my pen to expose such absurdities, if like some other gentlemen of the profession I was disposed to pass censure on every thing not done by myself. But as I hope and am persuaded that every physician, when he deviates from the common mode of treating a distemper, or prescribes any new remedy never before used in it, has his reasons for such practice, which it is possible another who had not seen the patient may not divine, it is candid to conclude, that what was done was at least well intended, and of consequence ought not to be censured. I am sorry to say that there are some amongst us who, forgetting the respect they owe to themselves and to the rank they bear in society, have on
many

many occasions made no scruple to act a contrary part, although they not only thereby manifest their hearts to be bad, and their heads worse, but verify the fable of the Viper and the File in the strongest manner.

Besides the above, there have been several other pretended instances of a second small-pox which have been much talked of at Berlin. I proceed to give an account of such circumstances as I have been able to learn relative thereto, together with the result of my inquiries made into the truth of the evidence given in support of them. By a knowledge of those particulars there is reason to believe every one of the examples which have been reported must be rendered doubtful, if not fully and explicitly disproved: And if, after fairly considering what follows, there be

a mind remaining sufficiently feeble to retain his fears, if he does not deserve to be declared a man wilfully blind to the force of reason and evidence, he may I think from motives of humanity be justly deemed an object of compassion.

That there have been instances of the small-pox being had a second time, many have asserted ; but there is no one example given of it which has come to my knowledge that is so fully proved as to be unquestionable: And to bring facts not perfectly indisputable as decisive evidence on so important a point, is cruel and uncharitable ; for it is a matter on the decision of which the tranquillity of the whole public depends.

All circumstantial evidence is as strong as possible against the existence of a second affection. But supposing,

posing, for once, it was otherwise, and that we were to admit all the instances that have been reported of it to be real facts; if we do but consider the number of those with whom the same event has never arrived, and with each of whom it must have been equally possible, the pretended instances will scarcely amount to one in ten thousand, and even every single example of these has been looked upon as a sort of miracle.

Was there therefore no other argument for our disbelieving it, our disbelief would be justified; as it is certainly more reasonable to conclude that the wisest amongst us must have been mistaken in judgement once in such a number of times, than that nature in those few instances should have deviated from her common law and made miraculous examples.

examples. But we will now leave opinions and arguments, and resume facts.

Amongst the several instances alluded to which were talked of at Berlin of persons having had the small-pox a second time, I was most confidently assured that there had been two examples in a family at Potsdam where the fact was unquestionable. The two daughters, it was said, of Major de Goetzen had been inoculated by Mr Professor Meckel some years ago, and were very well known to have had the small-pox from the inoculation ; that nevertheless, a few months after, they took the disease in the natural way ; that a full account thereof had been published in the Berlin Gazette ; and that it stood there recorded as an admitted fact, without ever having suffered the least

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contradiction. Hearing these assertions, I resolved to begin my inquiries by a candid examination into the real truth of them; and for this purpose, as the surest basis for my guidance, I had recourse in the first place to the public information above-mentioned, which I find appeared in a Berlin paper dated Jan. 7. 1772, and in these words:

“ Potsdam, Jan. 3. 1772. For some
 “ years the inoculation for the small-
 “ pox has been very much recom-
 “ mended by physicians of repute,
 “ which induced *somebody* at Potf-
 “ dam to have two children inocu-
 “ lated about three years ago by a
 “ learned physician; after which the
 “ eruptions appeared so very clearly
 “ that he gave his assurance that they
 “ were such as they ought to be af-
 “ ter the inoculation: but afterwards

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“ one of their sisters who had not
 “ been inoculated was seized with
 “ the natural small-pox, and both
 “ the sisters who had been inoculated
 “ were infected by her; on which
 “ occasion physicians were called to
 “ see them, who gave their assurances
 “ that they then had the natural
 “ small-pox. And of this it is
 “ thought necessary to inform the
 “ public.”

The positive assurances I had had
 of a clear conviction from this pub-
 lication excited in me the greatest
 astonishment, when I found it as
 above to be a bare averment only of
 a most extraordinary fact, without
 a particular description of its minute
 circumstances to enable the readers
 to judge of it for themselves; with-
 out saying to whom it happened, or
 by whom the account is given; an

account not published at the time of the event, but three years after ; and, to justify its appearance at that juncture, closed with a pretended insinuation of its being then made known for the public good ; whereas from a knowledge of the reigning spirit at Berlin against the practice of inoculation, it appears on the very face of it to have been nothing more than the feeble effort of some person in the dark maliciously attempting to give a stab to the credit of the physician, who was the only one of consequence there that encouraged inoculation, and who, if the world speaks truth, being a gentleman of great sensibility, became the victim of unmerited chagrin from such underhand practices and the overbearing treatment of a brother practitioner. Be this as it will, when information

formation at any time is given to the public in a manner that is explicit and open, and under the sanction of a name that is respectable, it ought to be treated with the regard it deserves; but on the other hand, when it is imperfect, invidious, and anonymous as this is, and meanly steals into the world so long after the event it relates to has happened, it must be universally allowed to be unworthy of the notice of any one. Yet as the fact thus published was still talked of as a material objection to the practice of inoculation, I resolved with the strictest impartiality to examine into the truth of it; and being desirous in affairs of this consequence to make my inquiries always as near as possible to the source of the matter searched into, I would first have applied for information to
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the celebrated and ingenious anatomical professor Dr Meckel, the physician who had inoculated these children, had the Doctor been living; but as he was not, and no information was obtainable from that quarter, I by the assistance of a friend was favoured with the most full and candid answers that could be given to such questions as I thought necessary to ask on the occasion, from the parents of the children who were thus said to have been affected, and whom I thought the most likely of any persons to give me intelligence that might be relied upon; the amount whereof, in the fullest and clearest manner that I can state it, is this.

Major de Goetzen and his lady, who still live at Potsdam, being happily blessed with five children, in the autumn 1767 had their eldest daughter,

ter, Louisa, then six years old, inoculated for the small-pox by Dr Kessler of Magdeburg; but, as is sometimes the case, without any fever, eruption, or other effect following in consequence of it: whereupon, in May 1768, not one of all the five children of this family having then passed either the chicken or the small-pox, and the neighbourhood being then quite free from the prevalence of either of those diseases, it was resolved that the same daughter which had before been ineffectually inoculated, should with her sister Elizabeth, who was then five years old, be inoculated together by the before-named distinguished physician Dr Meckel of Berlin, who I am informed inoculated them both with infected thread put into fresh incisions, and retained there by plasters, according

according to the old method of performing the operation.

On the fifth and sixth day from this inoculation the arms of both the children became inflamed, were of a deep red colour to the size of a finger's breadth round the edges of the several incisions; and not only retained that colour till the time of the appearance of an eruption, but also continued to yield a discharge for some time after, and were not perfectly healed in less than ten weeks.

On the eighth day from the operation the children were both somewhat uneasy and slightly indisposed; then there appeared twelve eruptions upon the eldest, and some hundreds upon the youngest, which in a very few days (the exact number of which cannot now be ascertained) all naturally broke and disappeared, without

out being succeeded by any sort of crusts or scabs, and without leaving any pits or marks on the places they occupied. Yet from the confidence this family had in the skill and integrity of the physician who inoculated the children, having his assurances that the fever and small-pox had sufficiently shewed themselves on both, the parents were perfectly satisfied that it was so, and from that moment looked upon them to be indubitably safe from all future infection.

The following winter in the month of December, the natural small-pox became epidemic, and almost universally prevailed in the town of Potsdam: a writing-master there who had the disease in his family, and who attended the children of Major de Goetzen to teach them to write, brought

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the infection, as it is imagined, to one of those children of the Major who had not been inoculated, and who afterwards communicated it to all the rest, as well to the two who had been inoculated as to those who had not; and the two in particular who were thought to have passed it by inoculation had the small-pox fever remarkably strong, and a great number of eruptions after it; all which matured well, dried into scabs, and have left those pits or engraved marks on their skins which are generally observed to remain from the small-pox, and which are looked upon in general to be the only sure characteristic proofs of persons having had the disease. When these children were ill from inoculation no person of the Faculty of physic either attended or saw them during the disease

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ease except Dr Meckel their inoculator, on whose judgment and declaration alone our faith must now rest that the disease they then had was the true small-pox.

When they were ill from the natural infection, they were constantly attended by the surgeon-major of the first battalion that was then at Potsdam, and by the surgeon of the guards ; besides which they were seen by Dr Frese physician to the Court, by the surgeon-majors of three other regiments that were also at Potsdam, and by a surgeon-pensioner ; all of whom agreed that their then illness was, without the least shadow of doubt, the true and natural small-pox. Dr Meckel who had inoculated them, and alone attended them in the disease consequent thereon, was likewise called to see them under the na-

tural disease ; but instead of visiting them as desired, pleaded other occupations as an excuse for the neglect of it.

As this last disease was contracted from their sisters when they unquestionably were ill with the natural small-pox, and at a time when it was almost universally epidemic where they were, it must be admitted that the disorder they had was the true small-pox, had we no other reason to be of that opinion. But as a further foundation for this belief, we have the assurance of the physician of the Court, five surgeon-majors, and a surgeon-pensioner, all of whom saw them while they were ill, and agreed that it really was so ; and to all this we have the additional unprejudiced evidence of the lasting marks of the disease being left upon the skin, which are universally admitted as the
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characteristic proofs, where no other certainty can be found, that the bearers of them indubitably have had the true small-pox. It remains therefore now to inquire if the first disease which was procured to them by the means of inoculation was the same or not; for without that, zealous as the enemies of inoculation have been to shew that these children contracted the natural small-pox after they had the disease from inoculation, it cannot, as is pretended, be any proof of their having had the small-pox a second time.

To judge properly on this point requires not only a thorough knowledge of the true small-pox, but also of such other diseases as bear a near resemblance to it, and of the several essential points in which they materially differ one from the other.

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As I wish therefore to have all my readers equally convinced of the truths I would establish as I am myself, and not rest their faith on my opinion of it implicitly; that they may severally be enabled to form a well-founded judgment on the points in question, the Medical Transactions of the Royal College of Physicians in London not being in the possession of every one, I beg leave, before I proceed further, to recite here, from the first volume of that work, a short essay which was read before that learned body on the 11th of August 1767, and was written by that eminently learned and most humane gentleman Dr William Heberden, on the disease called the Chicken or Swine pox, and which is as follows:

“ The chicken-pox and swine-pox differ I believe only in name; they
occasion

occasion so little danger or trouble to the patients that physicians are seldom sent for to them, and have therefore very few opportunities of seeing this distemper. Hence it happens that the name of it is met with in very few books, and hardly any ever pretend to say a word of its history.

“ But though it be so very insignificant an illness that an acquaintance with it is not of much use for its own sake, yet it is of importance on account of the small-pox, with which it may otherwise be confounded, and so deceive the persons who have had it into a false security, which may prevent them either from keeping out of the way of the small-pox or from being inoculated: for this reason I have judged it might be useful to contribute what I have
learned

learned from experience towards its description.

“ These pocks break in many without any illness or previous sign: in others they are preceded by a little degree of chillness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverishness for three days.

“ In some patients I have observed them to make their first appearance on the back; but this perhaps is not constant. Most of them are of the common size of the small-pox, but some are less. I never saw them confluent nor very numerous. The greatest number which I ever observed was about twelve in the face and two hundred over the rest of the body.

“ On the first day of the eruption they are reddish; on the second day
there

there is at the top of most of them a very small bladder, about the size of a millet-feed. This is sometimes full of a watery and colourless, sometimes of a yellowish liquor, contained between the cuticle and skin.

“ On the second, or at the farthest on the third day from the beginning of the eruption, as many of these pocks as are not broken seem arrived at their full maturity; and those which are the fullest of that yellow liquor very much resemble what the genuine small-pox are on the fifth or sixth day, especially where there happens to be a larger space than ordinary occupied by the extravasated serum. It happens to most of them, either on the first day that this bladder arises, or on the day after, that its tender cuticle is burst by the accidental rubbing of the cloaths, or by

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the patient's hands to allay the itching which attends this eruption; a thin scab is then formed on the top of the pock, and the swelling of the other part abates, without its ever being turned into pus as it is in the small-pox. Some few escape being burst, and the little drop of liquor contained in the vesicle at the top of them grows yellow and thick, and dries into a scab. On the fifth day of the eruption they are almost all dried and covered with a slight crust. The inflammation of these pocks is very small, and the contents of them do not seem to be owing to suppuration as in the small-pox, but rather to what is extravasated immediately under the cuticle by the serous vessels of the skin, as in a common blister. No wonder therefore that this liquor appears so soon as on the
second

second day, and that upon the cuticle being broken it is presently succeeded by a slight scab: hence too, as the true skin is so little affected, no mark or scar is likely to be felt, unless in one or two pocks, where either by being accidentally much fretted, or by some extraordinary sharpness of the contents, a little ulcer is formed in the skin. The patients scarce suffer any thing throughout the whole progress of this illness except some languidness of strength and spirits and appetite; all which is probably owing to their confining of themselves to their chamber.

“ I saw two children ill of the chicken-pox whose mother chose to be with them though she had never had this illness. Upon the eighth or ninth day after the pocks were at their height in the children, the mother

fell ill of this distemper then beginning to shew itself. In this instance the infection lay in the body much about the same time that it is known to do in the small-pox.

“ Remedies are not likely to be much wanted in a disease attended with hardly any inconvenience, and which in so short a time is certainly cured of itself.

“ The principal marks by which the chicken-pox may be distinguished from the small-pox are :

“ *1mo*, The appearance, on the second or third day from the eruption, of that vesicle full of serum upon the top of the pock.

“ *2do*, The crust which covers the pocks on the first day, at which time those of the small-pox are not at the height of their suppuration.

‘ Foreign medical writers hardly
ever

ever mention the name of this distemper; and the writers of our own country scarce mention any thing more of it than its name. Morton speaks of it as if he supposed it to be a very mild genuine small-pox: but these two distempers are surely totally different from one another, not only on account of their different appearances above-mentioned, but because those who have had the small-pox are capable of being infected with the chicken-pox; but those who have once had the chicken-pox are not capable of having it again, though to such as have never had this distemper it seems as infectious as the small-pox. I wetted a thread in the most concocted pus-like liquor of the chicken-pox which I could find, and after making a slight incision it was confined upon the arm of one who had
 formerly

formerly had it; the little wound healed up immediately, and shewed no signs of any infection.

“ From the great similitude between the two distempers, it is probable that instead of the small-pox some persons have been inoculated from the chicken-pox, and that the distemper which has succeeded has been mistaken for the small-pox by hasty and unexperienced observers.

“ There is sometimes seen an eruption concerning which I have been in doubt whether it be one of the many unnoticed cutaneous diseases, or only, as I am rather inclined to believe, a more malignant sort of chicken-pox.

“ This disorder is preceded for three or four days by all the symptoms which forerun the chicken-pox, but in a much higher degree.—On
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the fourth or fifth day the eruption appears, with very little abatement of the fever; the pains likewise of the limbs and back still continue, to which are joined pains of the gums. The pocks are redder than the chicken-pox, and spread wider, and hardly rise so high, at least not in proportion to their size. Instead of one little head or vesicle of a ferous matter, these have been from four to ten or twelve; they go off just like the chicken-pox, and are distinguishable from the small-pox by the same marks; besides which the continuance of the pains and fever after the eruption, and the degree of both these, (though there be not above twenty pocks), are, as far as I have seen, what never happen in the small-pox.

Many foreigners seem so little to
have

have attended to the peculiar characteristics of the small-pox, particularly the length of time which it requires to its full maturation, that we may the less wonder at the prevailing opinion among them that the same person is liable to have it several times. Petrus Borellus (*hist. et obs. rar. med. phys. centur. 3. obs. 10.*) records the case of a woman who had this distemper seven times, and catching it again died of it the eighth time. It would be no extravagant assertion to say, that here in England not above one among ten thousand patients is pretended to have had it twice; and wherever it is pretended it will always be as likely that the persons about the patients were mistaken, and supposed that to be the small-pox which was an eruption of a different nature, as that
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there was such an extraordinary exception to what we are sure is so general a law."

To this distinct and full description given us by Dr Heberden of the chicken-pox it will not be improper to add what Dr Sims has said of it in his judicious Observations on Epidemic Disorders, published at London in the year 1773; in which learned and useful work, p. 115. is as follows.

"During the autumn and winter 1769 a disorder prevailed which they call * here the Chicken or Swine Pock, according to the size of the pustules; it is likewise named Nerls or Blibes from trifling differences in the appearances. The first symptoms, and even the beginning eruption, in some cases resembled the

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* The county of Tyrone in the kingdom of Ireland, where the Doctor practised.

small-pox so nearly that they were only to be distinguished by knowing which distemper prevailed at the time, and by the want of that peculiar smell which I have always found accompany the latter. In general however the disease was milder, and it never proved fatal. The stomach was often affected with a slight nausea, the head with heaviness, the eyes were dull and languid, and the fever various and remittent. The feverish symptoms when high did not abate immediately on the eruption, but as soon as they did no return of them was to be dreaded. The eruption usually happened on the second night; and so early as the third night or fourth morning the pock assumed a pimply form, which readily distinguished it from the small-pox. It commonly dried on
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the sixth day; yet I have known cases wherein the symptoms running high, the pock growing large and filling with yellow matter, it remained until the seventh or even eighth day, so as to be mistaken for the small-pox and to have matter taken from it for inoculation. A similar error may have induced some to believe that they really underwent the small-pox a second time, neither disorder being perhaps ever caught twice. In some instances the eruption was kept back by purgatives and a cold regimen for a day or two, and, incredible as it must seem, even longer; in such the fever ran high, the head was greatly affected with pain and aching, the eyes were inflamed and could not bear any light, and there was a frequent and violent inclination to vomit; these all went

off quickly on using wine-whey, and a sweat attended by the pock breaking out.”——How contrary is all this to what we see constantly happen from purgatives and a cold regimen in the real small-pox from inoculation ?

From these very accurate and plain descriptions it evidently appears that the chicken or swine pox and the true small-pox are two very different and distinct epidemic diseases, to which the human body is liable once, and once only ; and that its having undergone one is no security to it against the contagion of the other :

That the infection of both these diseases is equally communicable by nature or art ; and being mixed with the circulating blood for a like number of days naturally produces a fever ; which fever for several days is
attended

attended with similar symptoms, but with more or less violence according to the constitution and different treatment of the patient after the infection has been received :

That when either the one or the other of these diseases is communicated by art, and the infection or virus is for that purpose applied to any wounded vessels of the skin so as to come into contact with the lymph or blood, a local inflammation is first brought on, which has not any manifest difference in its appearances whereby a judgment can be formed from which of the venoms it proceeds :

That the fever produced by the infection of either of these diseases in the same number of days from its commencement naturally ceases on the appearance of certain eruptions
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on the skin, or goes off, leaving such a change in the blood without any eruptions as makes it incapable of becoming feverish again from a second admixture of the same virus.

In all these particulars therefore these two diseases are so very similar that they may be very easily mistaken (to this period of them) one for the other, especially if the chicken-pox be violent and the small-pox mild, from which sort of small-pox it is that infection is always taken for inoculation if it be possible; and it often happens that the person who searches for the infection never sees the patient it is taken from, but relies on some friend to take it for him, who again places his confidence of the disease's being the true small-pox on the report only that it is so.

Yet, similar as these two diseases
are

are in all appearance, from their beginning to the time of the eruption of their pustules, and even at the first coming out of them, there is nevertheless a manifest difference to be observed in their nature and progress from that particular period, by which they may afterwards be very certainly and clearly distinguished by any attentive and judicious observer.

The eruptions which manifest themselves in the chicken-pox have been remarked often to shew themselves first on the back, and those of the small-pox first on the face.

On the first day of their appearance they both equally manifest a red colour, and are hard to the touch; but on the second day the eruptions of the chicken-pox begin to show on their tops a sort of small
vesicle

vesicle by which the cuticle is gradually elevated with a limpid fluid, which on the third day grows yellowish, and proves their maturity to be perfectly accomplished; whereas the eruptions of the true small-pox, on the third day, instead of being become soft and putting on any appearance of maturation, continue hourly to increase in their size, gradually distend the skin more and more, acquiring a violent burning heat, give great pain, and retain their primitive hardness, without having their contents in the least degree matured.

On the fourth or fifth day, at latest, from their appearance, the fluids separated into the eruptions of the chicken-pox, having pervaded or burst their containing cuticle, either subside and run off, or becoming

ming thick and glutinous form dry light crusts, which soon fall off, and rarely leave any marks where they were: but those of the true small-pox are never thoroughly im-
 posthumated before the eighth day, nor do they begin to harden into crusts or scabs till the ninth; after which they frequently adhere long, and on falling off leave deep and lasting marks on the places they occupied.

From these particular differences in the progress of the eruptions which appear in these two diseases, their natures are also evidently most essentially different. The eruptions in the chicken-pox causing an elevation of the cuticle from the cutis, and by means thereof assuming the appearance of vesicles, and increasing in size till the cuticle is so distended

as to burst and let go their fluids, are manifestly critical separations or deposits of matter from the blood itself, on the expulsion of which the fever depended: whereas the pustules of the small-pox, from the moment of their appearance gradually augmenting in size with inflammation and pain, and retaining their hardness for several days until they are become so many separate and distinct imposthumes full of true pus, seem rather to be miliary glands first inflamed and obstructed by means of the fever brought on by the variolous infection, and afterwards matured by the increased impulsive force of the circulation acting on them in that inflamed and obstructed state, instead of critical deposits from the blood. If this be not the fact, how must we account for the
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merable instances which experience affords of the small-pox fever, when properly treated with antiphlogistic remedies, going off as it does, without any eruptions to expel the morbid humours by the skin, as has been formerly thought necessary? If the variolous pustules were the produce of a necessary and critical separation of morbid humours from the blood to free the circulation from the small-pox virus, or from the principle on which it depends, all those who pass the disease without pustules must be subject to other disorders from a retention of that critical discharge; or be liable to retake the infection, and by means of a new fever make good the defective crisis; which daily experience so far shews us not to be the case, that those who pass the disease with-

out eruptions are equally secure from future infection, and generally have better health after than those whose habits have been purified by the most copious eruption.

To determine therefore with some sort of certainty and precision whether or not the disease which the two before-mentioned children had from the inoculation was the small-pox or not, it remains to apply the preceding remarks to the cases in question.

True it is that the inflammation and discharges which followed the operation on the arms of these children, with the uneasiness that affected them on the eighth day from the inoculation, and the eruption subsequent to those symptoms, are such a succession of circumstances as from their appearance would naturally induce

duce any person not conversant in the nice distinction between similar diseases, to believe those little patients had both undoubtedly had the small-pox from inoculation ; and the worthy physician who had inoculated them declaring it to have been so, must be admitted as an additional reason for supporting that belief.

But yet, if we consider that Dr Meckel who inoculated them was the only medical gentleman that vouched for its being so, and that his honour was at stake that it should pass for such ; as well as that he made a sort of tacit confession that he was not clearly convinced of its being so, by declining to go and see them when he was called for that purpose at the time when they had the disease from the natural infection ;

tion ; we cannot build greatly on his assurances. And as we are taught from experience, that best of medical guides, that inoculation made with the matter of the chicken-pox, as well as that of the small-pox, will equally produce all the symptoms which followed this operation, we cannot from the described succession of consequences from this inoculation, though accompanied with the assurances above, be at all convinced that it was the true small-pox, but with much more reason may be clear to the contrary, if we reflect but for a moment on the following particulars.

As has already been hinted, persons who search for matter with which to inoculate, often never see the patient but at the time they take the infection ; and not only rely for
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its being the true small-pox on the public report of such a person's being then ill with it, but also constantly endeavour to procure it from persons who have the disease in the lightest manner; in which species of small-pox they are most liable to be mistaken. In consequence whereof the chicken-pox has often been inoculated for the small-pox, and the patient left as liable to the true small-pox as before inoculated.

2dly, No account has been given from whom the infection was taken with which these children were inoculated; nor did any other person catch the disease of them when they had it, so as to prove thereby that they were really inoculated with the virus of the true small-pox.

3dly, At the time they were inoculated, the small-pox was not epidemic

deinic where they were, and of consequence infection more difficult to be found and more likely to be mistaken than it would have been if the disease had been prevailing; and from these several particulars the nature of the virus with which they were inoculated must be greatly questioned.

4thly, These children had neither of them had the chicken or small pox at the time they were inoculated, and were confessedly equally susceptible of the influence of both.

5thly, From the infection communicated by inoculation they both took a disease attended with the same symptoms; and though it is not pretended to have happened above once in ten thousand times (and that from a very extraordinary singularity of constitution) that any one
has

has taken the small-pox a second time; yet in this case, when the small-pox became epidemic, and these children were resident with their sisters who had that disease, it was not one only but both of them that were affected with it, the same as if they had never been inoculated. This was no more than natural after undergoing the chicken-pox only.

6thly, The chicken and small pox are diseases so similar in appearance one to the other that they are sometimes scarcely distinguishable one from the other even by skilful practitioners, except by their different durations, which is often not attended to, especially by inaccurate observers.

7thly, Though the disease which followed the inoculation of these children began with the appearances
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of the true small-pox, so far as that disease resembles the chicken-pox; yet in all its later periods and changes in which the two diseases differ one from the other, every symptom which characterises the true small-pox was wanting in both patients.

On the whole: if we are not desirous blindly to establish an unnatural event as a real fact, whether it be true or false;—as both these children took the disease of the virus they were inoculated with, and both of them certainly afterwards took the true small-pox;—as they had neither of them had either of the diseases before their inoculation, and from inoculation had both the same disease;—as the disease from inoculation wanted all the characteristic signs in both of them by the presence of which the true small-pox is distinguished

guished from the chicken-pox;—and as it is not above one in ten thousand that is pretended to have had the small-pox a second time (if a real instance of it has ever existed;)—it is incredible that two examples of it should have happened together in the same family and at the same time.—Whereas if the first disease, which was had in consequence of the inoculation, was the chicken-pox only, the children were equally susceptible of the small-pox after it as they were before; and it was very natural that they should have been both infected with it, as they were, when it became epidemic and they resided together with their sisters in the same house at the time they were ill with it. Doubt therefore who can if the disease which these children had from inoculation was any thing else

but the chicken-pox. It was too evidently so to admit of a question.

It had been cried aloud by the prevailing popular clamour in prejudice of inoculation that there had besides the above been many examples of a second infection of the small-pox in the neighbourhood of Berlin. I find however, on inquiry, that it was not really so; and that the term *many* had on this occasion been artfully used to excite astonishment, and multiply in the opinion of the public the few pretended instances that had been reported. That I am well warranted in this assertion is evident by my having not been able to get particular information of more instances of the reputed second small-pox (exclusive of those before mentioned) than two others which
lately

lately happened in the family of Colonel, now General, Prittwitz.

The two sons of that eminently distinguished gentleman were inoculated by Mr Professor Meckel, and had had the small-pox in consequence of the inoculation, some years before. Yet being taken ill in the month of March 1775, and (at that time) in the hands of Dr Muzell, the Doctor and their parents both announced to inquirers about them that their then disease was the natural small-pox.

On the rumour of this, as a number of children had been so lately inoculated in the town; as many of the Faculty were violent against the practice; as the clamour occasioned by the death of young Mr de Blumenthal was scarcely subsided; and as it was averred by a person of Dr Muzell's character and judgment in
medical

medical matters, that these children, who had passed the small-pox by inoculation, had now actually the disease a second time; it was very natural that all those who had been inoculated before should grow uneasy on the occasion, from the fear of its being their turn next to be additional examples of the same sort: And indeed, in consequence of the report, it was not long before Baron d'Arnim, whom I had so happily inoculated at Dresden with his only son, came to me, and expressed his uneasiness about it. I urged every reason I could suggest to induce him to think the report could not be true: but the fact stood in my way, on the judgment and veracity of Dr Muzell; by the strength of which it prevailed with such influence, that it could not be bore down by reasoning

soning alone, nor would this gentleman be satisfied with my arguments, strong as I thought them, unless I could see the children myself, and assure him from ocular demonstration that the disease they had was not the small-pox.

Conscious that it was my duty to do all in my power for the satisfaction of this gentleman and of the public, in order if possible to obtain an opportunity of seeing the children who were then said to have the second small-pox upon them, I took the freedom to write the following letter to Dr Muzell.

TO DR MUZELL, &c. &c.

March 22. 1775.

LEARNED SIR,

Having been ever taught to believe
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it was a law of nature that the true small-pox was a disease no one could have a second time, and having never read or heard of any one instance that on due reflection was a proof to the contrary, I have been a partisan for inoculation as a salutary practice and as an indubitable security from future infection.

But as I can never deny the testimony of my senses, and am open to conviction on clear proof, as well as wish to be undeceived in whatever I may be mistaken in; being now informed that two children of Colonel de Prittwitz, who it is said have passed the small-pox by inoculation, are again down with that disease under your care in the natural way; as it is an extraordinary event I have never yet, nor may never after have an opportunity to see; it
being

being my rule never to intrude myself where other physicians are concerned ; I take the liberty to apply to you as a brother-practitioner, as a man of humanity, and as a protector and promoter of every truth that can conduce to the tranquillity and health or safety of the public, to procure me a sight of these children, that I may have the conviction of my senses if it be so or not ; and your obliging me in it will be a lasting obligation on him who, though unknown to you, is, with due esteem and respect, desirous to be your approved friend and obedient humble servant,

W. BAYLIES.

To this letter I was honoured with the following answer.

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To

TO DR BAYLIES.

MONSIEUR,

SIR,

Pour satisfaire à vôtre désir, Monsieur, j'ai proposé hier au soir à Monsieur le Colonel de Prittwitz l'envie que vous avez de voir ses deux fils malades ; mais je fui mortifié de vous dire que toutes mes persuasions ont été infructueuses, car lui aussi bien que Madame son épouse l'ont absolument refusé ; et ce qui me surprit, il avoit déjà refusé la proposition qu'on avoit faite à eux l'après midi.

Il ne me reste rien que de vous assurer que je suis,

Monsieur,

BERL. le 23 Mars } Votre très-humble et
7 5. } très-obeissant serviteur,

MUZELL.

From

From my arrival in town till the passing of the two preceding letters almost every patient who had any sort of eruptive disease preceded by any feverish symptoms was immediately said to have the small-pox; but from the time these letters passed it was remarkable the prevalence of these reports ceased; and even the disease of General de Prittwitz's children was not only less positively asserted to be so than before, but also several friends of Dr Muzell made no scruple of denying strongly his having even averred it. Indeed it is remarkable that the Doctor, in his answer to my letter, has not given the disease that name, but has carefully avoided it by calling the patients the sick children: on this point therefore I beg leave to observe that if the Doctor did not look on the

childrens disease to be the small-pox it was not necessary for him to have asked the parents permission for me to see them; it would have been enough for him to have said that the report of its being that disease was without foundation; whereas by his telling me, in the answer to my letter, that he had desired the consent of the parents for me to see the children, which I had asked only to be allowed supposing their disease to be the small-pox, is an implicit declaration that he himself then thought it, or at least would have it pass with the public to be so.

Now I must confess that such was my persuasion of the absolute impossibility of a second infection of the small-pox that I did not in the least believe the report of these childrens having it again, although I was
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assured that so great a physician as Dr Muzell had declared it to be so ; but I concluded rather that the Doctor must have been mistaken in his judgment in this instance, for I could not think him capable of endeavouring to impose a falsehood on the public in so interesting a point.

But when I found I could not have the permission to see the patients as desired, I was quite convinced in my own mind that the disease they had was not the small-pox, and I was not without my suspicions that the parties who endeavoured to conceal it were all conscious of the same.

The sickness of these children, and the extraordinary reports about them, was at this time one of the most prevailing topics of conversation in every company ; in consequence whereof, a
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little time after the passing of the preceding letters, I was under a necessity, at a house where I dined, to make mention of the answer I had received from Dr Muzellon my requesting by letter to see them; on which a gentleman present immediately replied to me that he was sure what I said could not possibly be true, for he was confident that if Dr Muzell had requested what I had asked of the parents of the children they would not have refused him; adding, as a reason for such certainty, that he well knew that M. de Sellentin, whose most amiable and only daughter had been inoculated by Professor Meckel at the same time with the sons of the General, and who from his anxiety for his daughter's safety had requested the same liberty, was refused the favour, and that for no other reason than
that

that Dr Muzell himself had forbid any one being admitted to see the children; in which they would not disoblige him, as the recovery of the General from a violent illness had been lately owing to his skill and care.

Being thus informed that the General's family had refused M. de Sellentin the favour he asked because they would not disoblige the Doctor, yet nevertheless would not permit it to me though the Doctor himself requested it for me, I could not help suspecting that all was not candid and open; but doubting the truth of my last intelligence, I immediately wrote to M. de Sellentin the following letter, and received in return the subjoined answer, which I now publish by his permission.

To

To M. de SELLENTIN.

S I R,

Persuaded, from the confessed probity which stamps your character, that you are a friend more to truth than to any individual, and that you cannot fail to feel pleasure in an act of humanity, I take the liberty to beg your information in the following particulars, on a knowledge of the truth whereof the credit or discredit of a certain interesting intelligence totally depends. I trust therefore you will explicitly tell me if the following reports which prevail in this town are true or not.

It is said that you have a daughter who was some time since inoculated with the children of Colonel de Prittwitz by the deceased Professor Meckel,

Meckel, and that they all had the small-pox in consequence thereof :

That some weeks after your daughter was recovered of the small-pox after inoculation, a bladdery eruption appeared in some parts of her body after a slight fever, which was invidiously reported to be a second small-pox, but which was really not so, as you was convinced by the assurances of your physician and by the manner of their going off :

That lately, when it was reported from the declarations of Mr Muzell that the children of Colonel de Prittwitz, who had been inoculated with your daughter, were actually ill with the natural small-pox; being alarmed at the event, you by yourself, or by some other person, applied to the Colonel to be permitted to see them, that you might be thereby convin-

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ced if it was so or not ; but that you received for answer that it could not be complied with because it would affront Dr Muzell, who had desired that no person whatsoever should have that liberty.

Relying on your benevolence to excuse this freedom, I hope for your answer ; and am, Sir,

Your obliged and obedient

BERLIN, 10th April
1775.

humble servant,
W. BAYLIES.

To the several questions in this letter I received the following answers.

TO DR BAYLIES.

Berlin, le 16me Avril 1775.

MONSIEUR,

Je croirois manquer à l'humanité
et

et au devoir de l'honnête homme, si je balançois de vous répondre avec toute la sincérité possible à l'obligeante lettre que vous m'avez fait l'honneur de m'adresser.

Il est vrai que feu M. le Professeur Meckel a inoculé la petite vérole à ma fille, à peu près dans le même temps que les enfants de Messieurs de Siegroth, de Rothenburg et de Prittwitz subirent la même opération.

Tous eurent la petite vérole, et ma fille entr'autres l'eut en si grande quantité que je lui ai compté quatre vingt six boutons uniquement sur le visage. Quelques semaines après que je croïois le tout passé heureusement, on vînt m'annoncer un matin que ma fille après avoir eu la nuit passée une forte fièvre avoit repris la petite vérole une seconde fois. Je fus frappé en la voïant remplie de nouveau

de plus de boutons qu'elle n'avoit eu, toutes fois avec cette différence, que l'éruption s'étoit faite avec plus de précipitation et que les boutons étoient beaucoup plus grands. Mr. Meckel en arrivant me tranquillisa en me montrant cette différence, et m'assurant que ce n'étois point du tout la petite vérole.

J'eus à combattre dans ce temps beaucoup de préjugés de la ville, mais je fus convaincû même par les crises de la maladie que cet homme habile dont je respecte les cendres ne m'en avoit point imposé.

Apprenant dernièrement par hazard de Madame de Rothenburg fort inquiète que les fils de Monf. le Colonel de Prittwitz inoculés dans le même temps que nos enfants avoient repris la petite vérole, je tâchai de la tranquilliser par l'expérience que j'avois

vois faite avec ma fille ; mais comme elle soufenoit que Mr. le conseiller privé Muzell avoit déclaré la maladie pour une véritable petite vérole et la traitoit en conséquence, je n'eus rien de plus pressé que de tâcher de m'en convaincre par mes propres yeux.

Connoissant le valet de chambre de Mr. le Colonel de Prittwitz, je comptai bien de satisfaire ma curiosité, et d'obtenir par lui la permission de voir les malades ; mais j'eus pour réponse que cela faisant de la peine à Mr. le conseiller privé Muzell, Mr. le Colonel de Prittwitz qui venoit de relever d'une forte maladie, ne vouloit pas le défobliger.

Je réitérai mes instances à Mr. le Major de Köhler, ami intime de Mr. le Colonel ; mais j'eus la même réponse.

J'ai

J'ai l'honneur d'être avec la considération la plus distinguée,

MONSIEUR,

Votre tres-humble et
très-obéissant Serviteur,

DE SELLENTIN.

What credit may deservedly be given to the reality of these concealed children having had the small-pox a second time as it was reported I now leave to the reflection of my readers, having above informed them of the several discrediting circumstances and letters relative thereto. Yet to shew further the incredibility of the preceding and all other similar reports of any one's having taken the small-pox again after having once gone through it, we have two such convincing cases upon record as must by every reasonable person be deemed

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ed fully demonstrative of its absolute impossibility.

The first of them is contained in the 4th chapter of the celebrated Dr Mead's learned treatise upon the small-pox, where, speaking of the accidents that have happened in that disease, he has these words.

“ A certain woman who had formerly had the small-pox, and was now with child and near her reckoning, attended her husband in the distemper. She went her full time, and was delivered of a dead child. It may be needless to observe that she did not catch it on this occasion; but the dead body of the infant was a horrid sight, being all over covered with pustules; a manifest sign that it died of the disease before it came into the world. Wherefore, says the Doctor, let none entertain the least suspicion

suspicion that the same person can possibly have this distemper twice."

The other instance referred to stands published in the Philosophical Transactions of the Royal Society of London, in a paper written by Mr William Watson, a member of that Society, which was read before them on the 7th of December 1749.

We are there informed " that a carpenter's wife, who was then seven months gone with child, and who years before had passed the small-pox herself, attended a servant of her's who was ill with a very putrid sort of it; after which, at her full time, she was happily delivered of a girl, on whom at the time of her birth there plainly appeared the marks of above forty pustules in different parts of her body; from whence, though the mother had felt no indisposition

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at the time, it was judged that her infant had gone through the disease before its birth, and that the child was of consequence incapable of being infected with it again, as she really proved to be on being afterwards inoculated." If we have any right to draw conclusions from medical observations, we may fairly from these conclude that if the human blood was capable of receiving the small-pox infection a second time it must have been absolutely impossible for the unborn infants to have gone through the disease in the bodies of these two pregnant women, as they did, without its having manifested its influence by producing its common and natural effects upon the mothers: And if, with the knowledge of these exemplary proofs, any one can retain a contrary opinion, it cannot

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be founded on reason or fact, but must be the result only of prepossession and prejudice.

After the recital of these cases, than which it is scarce possible any should be more in point to the matter in question, or more demonstrative of the fact these sheets are intended to prove, it may possibly be looked upon as superfluous to add any other ; yet as his Majesty the King of Prussia, ever attentive to the true interest and preservation of his subjects, after having attached me to his person and country, was graciously pleased of his own accord, from a conviction of the utility of inoculation, to give his sanction to its practice, and to order a physician to be called from each of his provinces to Berlin, there to be instructed by me in the modern method of that most salutary

tary prophylactic branch of the healing art, that the most distant of his subjects might partake of its benefits with an equal prospect of success as those that were near to his metropolis and residence: and as the event of that parental order of his Majesty affords additional proofs in a variety of instances of the impracticability of taking the small-pox a second time, it will not be improper here to give a full, plain, and just account of every thing that happened in the execution of that order. Besides forwarding my original design in writing these sheets, this narration is the surest means to prevent any misrepresentations which may possibly be invented on this occasion to impose upon the faith of the inquiring public. For the truth of it I appeal to the several gentlemen who attend-

ed me in obedience to his Majesty's orders, and who were eye-witnesses of the several particulars here related.

About the end of February 1775, I had the honour to be informed by his Majesty that it was his pleasure to give his sanction to inoculation, in hopes of preventing the ravage of the natural small-pox amongst his subjects in the different parts of his dominions, and that he had ordered his chambers of war and domains to call a physician from each of the provinces * under their jurisdiction to come
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* These gentlemen were, Dr and Professor Kölpin of Stettin; Dr (now Counsellor of the court) Opitz of Minden; Dr Reinbeck medicus pensionnarius of Custrin; Dr Lindenberg of Wittstoch, in the Prignitz; Dr Jelzke of Spandau; Dr Schultz of Seehausen; Dr Krüger of Bromberg; Dr Elfner of Königsberg; Dr Fritze of Halberstadt; Dr and Professor

to Berlin in order to be instructed by me in the true method of its practice. I immediately did all in my power, both by persuasion and the offers of pecuniary rewards, to procure proper subjects to be inoculated, that the precepts and directions I might think necessary to give to the several gentlemen appointed as above might be more effectually demonstrated to them by examples in practice. But such was the prevailing prejudice at that time against inoculation in Berlin that it was impossible for me to find an individual that would submit to it; in consequence whereof his Majesty, to prevent his good intentions being frustrated,

fessor Morgenbesser of Breslau; Dr Croner of Cöslin; Dr Bruck of Insterburg, in Prussia; Dr Donkerman of Lingen; Dr Koblig of Elbing.

frustrated, permitted proper subjects to be chosen out of one of his houses established for the maintenance of orphans, and also that proper apartments with every other necessary should be provided for their accommodation in the house they belonged to. In obedience to this order, the building called *Frederick the Great's Hospital* was fixed upon for the purpose.

In this house are lodged and taken care of about four hundred children, none of which are received there by the rules of the Charity under four years of age. When they are brought for admission they are rarely accompanied by any person who can give a certain account whether they have before had the small-pox or not; nor is it a necessary qualification that they should have had it in order to
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their admission; and therefore it is very probable that no inquiries are ever made on that head at the time they are received. Of consequence the only certainty that the children in this house have not before had the small-pox is their being free from those pits or marks commonly left upon the skin where the disease has been in any degree violent, or when the natural acrimony of the matter in the pustules has been augmented by the patients being kept too hot while the disease was upon them.

And it must be unnecessary to observe that it is not only extremely common for young children to pass the small-pox when they have it lightly, and in a mild season when a very favourable fort prevails, but also sometimes when they are greatly loaded with eruptions, without their retain-
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ing the least marks upon the skin from the pustules by which it might afterwards be clearly discerned that they have certainly had the distemper.

All that could be done therefore on this important occasion was to choose from amongst the children such only as were perfectly free from all marks or signs of their having passed it before.

As the gentlemen who were called to be instructed in the art did not come together in consequence of the different distances of the several places of their residence from Berlin; finding they were all persons well established in their professions in the towns they inhabited, and that they could not without great injury be long absent from home, I began my operations on eight orphans only; resolving to add others to the number
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then inoculated as the several gentlemen who were to be instructed might successively arrive, in hopes by that means of preventing to each of them the inconvenience that might result from any unnecessary delay.

Having by the post before received a thread charged with fresh variolous matter from the small-pox hospital in London, where of late it has been sold for the benefit of the Charity, and from whence I had often before been supplied without ever finding it ineffectual, I began my operations on Friday the 24th of March 1775, in the presence of such of the gentlemen as were then come to learn the practice, Captain de Termow the inspector, and M. Felgermann the surgeon in ordinary to the hospital. Eight of the children of the charity having been duly

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prepared by diet and medicine, and found perfectly free from any marks of the disease, I inoculated them by inserting small portions of the above-mentioned thread, properly moistened, into two different superficial incisions which, for the sake of greater certainty, I made on both arms of each of them, properly securing it there to prevent its slipping. I had not the least doubt of the disease coming on as it ought to do; yet neither fever nor any other symptom followed in consequence of it, though the arms of two of them on the third or fourth day from the operation had a degree of inflammation for a day or two, when it suddenly disappeared without any other effect whatsoever.

Being thus disappointed, and others of the gentlemen who were to learn the art arriving, my infected thread which

which I had received from the London hospital being all used, and no person in Berlin having the disease that I could get knowledge of, from whom I might procure fresh variolous virus, I resolved to use a well-kept thread which I myself had saturated with the small-pox matter from a young gentleman who had the natural disease in the house of the Cadets in December before, having often used much older matter with success. Accordingly, on the 3d of April 1775, I did with this thread inoculate once more the eight children who had been unsuccessfully inoculated before, together with four others fresh chosen from the rest of the orphans, in the same manner as is before described. But to my great mortification these second inoculations proved equally ineffectual

on every one of the children with those I had made in the first instance.

Thus a second time totally frustrated in my reasonable hopes upon such a number of children, and without any discernible cause for it, I could not but suspect the bad success to have been in some degree owing to the inefficacy of the matter; and in order to be sure if it was so or not, I offered some ducats as a reward to any one who could find me a person who had the natural small-pox upon them, from whom I might be admitted to take fresh matter for that purpose. But whether from the prevailing prejudice against the encouragement of the practice of inoculation, or from a real impracticability at that time of finding any such person, all my endeavours and proffered rewards were of no avail,
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till I was advised by one who knew the practice of Berlin better than I did, to apply to M. Philippi the president of the police, to discover for me (if possible) some person in the town who was ill with the small-pox. This I immediately did, and a few days after that gentleman very obligingly gave me intelligence that a child of one Basse a baker at the Rosenthal-gate was ill with it. On this intelligence I visited the baker immediately, and finding the information to be true, and that the disease on his child would the next day be in a proper state to afford good matter for the purpose, I got leave of him to bring all the children I wished to inoculate to his house, that the infection might be communicated to them in a warm and fluid state; and accordingly on the morrow, being

ing Friday the 12th of May 1775, the twelve orphans before inoculated, with seven others fresh chosen from amongst the remaining children in the hospital, were all conducted together to the baker's house, where the child was then ill with the natural small-pox, with which he was much loaded and at the crisis. Thither the surgeon of the hospital, who was ever most diligent in his duty on the occasion, and the several gentlemen then in Berlin who were come to learn the practice, attended me likewise: when, in the presence of all of them, I not only inoculated the nineteen children with warm fluid matter from the ripe pustules of the baker's child, but for near an hour kept them all together within the infected atmosphere of its chamber, that they might have all possible chance

chance of taking the disease by effluvia if my endeavours of giving it to them by contact should prove ineffectual. Yet from this third inoculation of the first eight, and second inoculation of the next chosen four, as well as the double attempt to infect the last chosen seven by inoculation and by effluvia, (though these inoculations were made in the chamber of the child that was naturally ill with it, and in the surest manner of infecting with warm fluid virus), not one of all the nineteen children manifested the least symptom of the disease in consequence of it. Whence with the strongest reason in the world it may be concluded that these several children must all of them have happily passed the disease before in the natural way, and were of consequence every one of them incapable
of

of being infected with it again. If it was not so, I know no means by which so extraordinary a fact can be accounted for.

But notwithstanding my repeated endeavours to give the small-pox to these children proved ineffectual, and the gentlemen who had attended me by his Majesty's order were thereby unfortunately disappointed in seeing the regular changes and effects of the variolous virus when communicated by inoculation to the circulating blood, yet during their stay here they were fully informed of the true nature of the disease, and of all the remedies, rules, and observations requisite to make them successful inoculators; and I have had the pleasure to be informed from Stettin that M. Professor Kölpin, who was one of the number, and who has published

ed a translation of my Aphorisms of the Small-pox in the German language, has already given proofs of his skill in it, having inoculated there a considerable number of children, who have all passed the disease under his care in the most desirable manner. So that the good intentions of his Majesty to the public have not been disappointed.

With the hopes that, by the circumstances mentioned in the preceding pages, the particular cases in Berlin which have been reported as instances of the small-pox being had a second time are fully disproved to have been such, or at least are shewn to be too questionable to be received as decisive evidence of the possibility of a second infection; and that the several other cases, facts, and arguments, which have been brought to

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demon-

demonstrate the incredibility of such instances, will, if properly considered, fully quiet the minds of all such as may have had fears to the contrary; I shall now leave the world to draw their own conclusions; and having done what I thought my duty as an advocate of truth, as a physician interested for the health and safety of the people, and actuated by humanity, without which he must be a disgrace to society, I shall conclude the whole with a quotation which I think not inapplicable to the occasion, from the late celebrated Baron Van Swieten, whom the world well knows to have been an opponent rather than a friend to the practice of inoculation. In his excellent Commentaries on the Aphorisms of the justly renowned Boerhaave, speaking of the small-pox, he says:

“ It

“ It must be allowed that the following particulars seem to make greatly in favour of inoculation.

“ It has been affirmed by men of credit that scarce any one has died of the inoculated small-pox, whereas numbers have perished by that taken in the natural way. It has been laid down as a maxim, that in the inoculated small-pox the disorder performs its whole course without the least disturbance or danger; that beauty runs no risk from it as from the disorder taken in the natural way; nor has it scarce ever been followed with inflammations of the eyes, abscesses, or any other disagreeable complaints arising from a metastasis of the variolous matter on the different parts of the body; nay, that it has never been attended with the secondary fever as the natural small-

“ pox when accompanied with a
 “ great number of pimples usually is,
 “ Moreover, the method of ino-
 “ culation seems to be possessed of
 “ this other singular advantage, name-
 “ ly, that the physician can choose
 “ for the using of it that time of life
 “ and season of the year at which it
 “ may be supposed the patient can best
 “ bear it, and stands the best chance
 “ of getting over it. Besides, in the
 “ way of inoculation, the contagion
 “ can be applied to the body when
 “ in the best health, or if it happen
 “ to be a little out of order, the ope-
 “ ration may be deferred till not only
 “ every thing is put to rights again,
 “ but the body particularly fitted to
 “ go through the disorder ; whereas
 “ when the small-pox prevails epi-
 “ demically, it is apt to attack every
 “ one who has not already had it,
 “ without

“ without distinction of age, sex, or
 “ state of body, so as sometimes to
 “ fasten on those whose strength has
 “ been already impaired by some
 “ other disorder, and even pregnant
 “ and lying-in women, &c. Now
 “ the eternal fear of all these evils, it
 “ is said, may be avoided by means
 “ of inoculation, with little trouble
 “ and less danger, since from the nu-
 “ merous observations there can be
 “ no just reason to fear a relapse;
 “ and these observations are confirm-
 “ ed by the experiments professedly
 “ made even upon himself by the il-
 “ lustrious Mally *.” The learned
 Baron goes on and says :

“ These

* See a discourse on inoculation, read be-
 fore the Royal Academy of Sciences at Paris
 the 24th of April 1754, by M. la Condamine
 knight of the military order of St Lazarus,
 fellow

“ These blessings which we are
 “ taught to expect from inoculation
 “ are no doubt great and many. Still
 “ I could never bring myself to pro-
 “ nounce on the occasion till I had
 “ weighed every thing maturely that
 “ could be said on the other as well
 “ as on this side of the question. For
 “ this purpose I first examined my-
 “ self with all the attention I possibly
 “ could, to see that I was as free from
 “ partiality

fellow of the Royal Society, and member of
 the Royal Academies at Paris and at Berlin,
 which was translated into English by Dr Mat-
 ty, who in the notes on the 32d page of his
 translation says: “ I lately tried this experi-
 ment on myself, and the event was the same,
 viz. the infection, though conveyed by means
 of two incisions, had no effect on my blood,
 as it had been sufficiently defecated fifteen
 years before by the natural small-pox; for the
 minute particulars whereof, see the Journal
 Britannique for Nov. and Dec. 1754.”

“ partiality on either side as the frail-
 “ ty of our nature will admit.” Oh
 that others would do the same ! Full
 of candour and humanity, he goes
 on and says : “ The physicians who
 “ differ in opinion with regard to the
 “ expediency of inoculation must all
 “ notwithstanding be allowed to have
 “ the same thing ultimately in view,
 “ namely the good of mankind ; and
 “ this is enough to entitle them to
 “ my love and respect. Should there
 “ be any others who have endea-
 “ voured to sustain their way of
 “ thinking by any wicked tricks, I
 “ leave them to the indignation, or
 “ at least contempt, of all honest
 “ men.”

F I N I S.

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